UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/080,811	[illegible]	[illegible]	8151.09.00

023495
ABBOTT LABORATORIES
DEPT. 377 - AP6D-2
100 ABBOTT PARK ROAD
ABBOTT PARK IL 60064-6050

MM22/1022

EXAMINER	
MYERS,C	
ART UNIT	**PAPER NUMBER**
1655	29

DATE MAILED: 10/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/250,883	Applicant(s) RUSSELL ET AL.	
	Examiner Carla Myers	Art Unit 1655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The request filed on October 10, 2001 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/250,883 is acceptable and a CPA has been established. An action on the CPA follows and contains new grounds of rejection.

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 25-34 are rejected under 35 U.S.C. 101 because the claimed invention lacks a credible, substantial, specific or well-established utility.

The claims are drawn to polynucleotides comprising a sequence selected from the group consisting of SEQ ID NO: 1-14. The claimed polynucleotides are not supported by either a specific and substantial asserted utility or a well-established utility. The specification fails to provide objective evidence of any activity for the claimed polynucleotides or to show that polynucleotides having the stated consensus sequence of SEQ ID NO: 14 even exist. The specification teaches that a consensus sequence derived from SEQ ID NO: 1-13 hybridizes to ESTs in 27% of breast tissue samples, whereas the consensus sequence only hybridizes to ESTs in 3.4% of non-breast tissue samples. Based on this information, the specification concludes that the individual sequence fragments of SEQ ID NO: 1-13 and the consensus sequence of SEQ ID NO: 14 are useful in "detecting, diagnosing, staging, monitoring, prognosticating, preventing or treating or determining the predisposition to, disease and conditions of the breast, such as breast cancer" (see page 10 of the specification). However, the specification provides absolutely no

evidence that the sequences of SEQ ID NO: 1-14 are correlated with any type of disease or condition of the breast. There is no information provided in the specification regarding the level of expression of SEQ ID NO: 1-14 in any type of diseased breast tissue. The finding that mRNAs which hybridize to SEQ ID NO: 14 are more prevalent in breast tissue than in normal tissue does not indicate that such sequences are associated with diseases or conditions of the breast. Furthermore, the finding that mRNAs which hybridize to SEQ ID NO: 14 are more prevalent in breast tissue rather than normal tissues does not indicate that mRNAs which hybridize to any one of SEQ ID NO: 1-13 are also more prevalent in breast tissue because there is no evidence concerning the hybridization properties of the individual nucleotide fragments. The specification suggests that the claimed polynucleotide could be used for therapeutic purposes. Clearly, further research would be required to identify a disease for which the protein encoded by SEQ ID NO: 1-14 is involved and for which treatment with SEQ ID NO: 1-14 or any nucleic acid having 90% identity with SEQ ID NO: 1-14 would be effective or for which detection of SEQ ID NO: 1-14 expression would be informative. As stated in Brenner v. Manson, 383 U.S. 519 535-536, 148 USPQ 689, 696 (1966) " a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion". Support for an asserted utility that is specific and substantial would require, for example, a showing of a particular function for an encoded polypeptide. Merely identifying and studying the properties of a polypeptide or the diseases in which a polypeptide or polynucleotide may be involved does not constitute a "real world" context of use. Moreover, the use of the claimed polynucleotide to

detect breast tissue is considered to be a general use, rather than a specific use since tissue specific expression is a characteristic of a large genus of nucleic acids. Accordingly, the claimed invention is not supported by either a specific or substantial asserted utility or a well-established utility. Applicants attention is directed to the Utility Examination Guidelines, Federal Register, Vol. 66, No. 4, pages 1092-1099, Friday January 5, 2001.

3. Claims 25-34 are rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial, or credible asserted utility or well-established utility for the reasons set forth above, one skilled in the art would not know how to use the claimed invention.

RESPONSE TO ARGUMENTS

In the response filed October 10, 2001, Applicants traverse this rejection by stating that the claimed sequences are members of a RING finger family. This argument has been fully considered but is not persuasive because the specification as originally filed does not characterize the claimed nucleic acids as encoding for a RING finger protein. Therefore, the specification as originally filed did not teach one of skill in the art to use the disclosed nucleic acids to encode RING finger proteins.

The response further states that BS203 has almost 100% of the open reading frame of the GERP sequence and points to Exhibit A as showing the homology between GERP and BS203.

This argument is not persuasive because the comparison between BS203 and GERP is not provided in the form of a declaration and it is unclear as to how applicants have arrived at the conclusion that BS203 comprises almost 100% of the open reading frame of GERP. Exhibit A shows a GERP sequence that appears to be 2646 nucleotides in length. The BS203 nucleic acid described in the specification (SEQ ID NO: 14) is 1332 nucleotides in length. Exhibit A also refers to a BS203 sequence, but this sequence is 1399 nucleotides in length. It is unclear as to the relationship between the BS203 sequence set forth in Exhibit A and the BS203 sequence set forth in the present application. Furthermore, Exhibit A contains three additional lines that are not labeled, one of the lines being highlighted in yellow. However, the response does not address the identity or significance of these lines. Accordingly, the evidence provided in Exhibit A does not establish that BS203 encodes for a RING finger protein or that SEQ ID NO: 14 encodes for a full length, functional protein.

Applicants state that the Vincent et al reference (Exhibit B) discloses that GERP is a RING finger protein that is expressed in a variety of adenocarcinomas, which comprise 95% of breast malignancies. It is stated that GERP maps to chromosome 10q24.3, a region showing frequent deletion or loss of heterozygosity in glioblastomas. The response states that this locus is thought to harbor tumor suppressor genes, indicating that GERP may be a tumor suppressor gene important in gliomas and other cancers. Applicants thereby conclude that BS203 can be used to diagnose breast cancer. Applicants arguments have been fully considered but are not persuasive because the findings obtained with GERP cannot be extrapolated to BS203. Again, Applicants

have not provided sufficient evidence to support the allegation that BS203 is a RING finger protein. Even if Applicants provide evidence to support this assertion, the specification as originally filed did not contemplate or characterize BS203 as a RING finger protein. Thereby, use of the claimed nucleic acids to encode for a RING finger protein does not meet the utility requirements. Furthermore, the specification as originally filed does not teach one of skill in the art how to use BS203 as a RING finger protein. In addition, no clear evidence has been provided in the specification to show that any of the claimed nucleic acids encode for proteins having any functional activity and particularly no evidence has been provided to show that the claimed nucleic acids encode for proteins having the functional activity of a RING finger protein. Moreover, the finding that GERP maps to a region which shows frequent deletion or loss of heterozygosity is not sufficient to establish that GERP is a tumor suppressor protein. The 10q24.3 region may include additional nucleic acids which may actually be the critical sequences associated with cancer. Secondly, not all sequences deleted or showing loss of heterozygosity encode for tumor suppressor proteins. Thirdly, even if GERP is found to be a tumor suppressor protein, there is no evidence to support the conclusion that all RING finger proteins are tumor suppressor proteins and thus no evidence to support the conclusion that BS203 is a tumor suppressor protein. No factual evidence has been provided to show that the instantly claimed nucleic acids are correlated with cancer and could be used for the diagnosis of breast cancer or that the claimed nucleic acids have the same activity as any particular RING finger protein.

The general concept of using a nucleic acid for diagnostic purposes in the absence of a disclosure of a particular association between the nucleic acid and a specific disease does not meet the 101 requirements for a showing of a specific, substantial and credible utility. As stated *In re Kirk*, 153 USPQ48, 53 (CCPA 1967), "We do not believe that it was the intention of the statutes to require the Patent Office, the courts, or the public to play the sort of guessing game that might be involved if an applicant could satisfy the requirements of the statutes by indicating the usefulness of a compound in terms of possible use so general as to be meaningless and then, after his research or that of his competitors has definitely ascertained an actual use for the compound, adducing evidence intended to show that a particular specific use would have been obvious to men skilled in the particular art to which this relates".

4. Claims 25 and 28-34 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to polynucleotides comprising a sequence selected from the group consisting of SEQ ID NO: 1-13. The claims as broadly written include nucleic acids in which sequences are present flanking SEQ ID NO: 1-13. The broadest reasonable interpretation of the claims indicates that the claims are inclusive of BS203 genes and BS203 genomic sequences. However, the specification does not teach any full length BS203 genes or any BS203 genomic sequences. The specification does not teach that any of the nucleic acids of SEQ ID NO: 1-13

span more than one exon, and thereby the claims as written include flanking intron sequences and full length gene sequences. Furthermore, the claims include nucleic acids which are defined only in terms of a small fragment. The claims do not define the sequence of the flanking nucleic acids, nor do the claims include functional language for the nucleic acids. In *The Regents of the University of California v. Eli Lilly* (43 USPQ2d 1398-1412), the court held that a generic statement which defines a genus of nucleic acids by only their functional activity does not provide an adequate written description of the genus. The court indicated that while Applicants are not required to disclose every species encompassed by a genus, the description of a genus is achieved by the recitation of a representative number of DNA molecules, usually defined by a nucleotide sequence, falling within the scope of the claimed genus. At section B(1), the court states that "An adequate written description of a DNA...'requires a precise definition, such as by structure, formula, chemical name, or physical properties', not a mere wish or plan for obtaining the claimed chemical invention". In analyzing whether the written description requirement is met for a genus claim, it is first determined whether a representative number of specifies have been described by their complete structure. In the instant case, the specification does not teach any intron or 5' regulatory or 3' untranslated sequences. The specification also does not teach any additional nucleic acids which comprise the fragments of SEQ ID NO: 1-13. It is then determined whether a representative number of species have been sufficiently described by other relevant identifying characteristics (e.g. restriction map, chromosomal map position, biological activity of an encoded protein product, etc.). In the instant case, no such identifying

characteristics have been provided for any of the polynucleotides. While at the time of filing applicants were in possession of polynucleotides consisting of SEQ ID NO: 1-14, the specification provides no information regarding genomic sequences surrounding the sequences of SEQ ID NO: 1-13. Furthermore, the specification does not identify any additional BS203 nucleic acids other than the consensus sequence of SEQ ID NO: 14. The limited information provided in the specification is not deemed sufficient to reasonably convey to one of skill in the art that Applicants were in possession of BS203 genomic sequences or nucleic acids comprising SEQ ID NO: 1-13. Therefore, the written description requirement has not been satisfied for the claims as they are broadly written. Applicants attention is drawn to the Guidelines for the Examination of Patent Applications under 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

5. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 is indefinite and confusing over the recitation of "degenerate coding sequences thereof". While it is clear as to what is meant by degenerate variants of polynucleotide sequences, it is not clear as to what is intended to be meant by degenerate variants of a protein sequence.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carla Myers whose telephone number is (703) 308-2199. The examiner can normally be reached on Monday-Thursday from 6:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones, can be reached on (703)-308-1152. The fax number for the Technology Center is (703)-305-3014 or (703)-305-4242.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0196.

Carla Myers

October 17, 2001

CARLA J. MYERS
PRIMARY EXAMINER